



## AMES RESEARCH CENTER

National Aeronautics and Space Administration

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### 14-Foot Transonic Wind Tunnel (14' TWT)

#### Primary Use:

The facility is used primarily for performance and stability and control testing of aircraft configurations. A significant amount of aero-optical testing is also performed.

#### Capability:

- Mach Number: 0.3-1.15
- Reynolds Number per foot:  $2.6-4.2 \times 10^6$
- Stagnation Pressure, PSIA: 14.7
- Temperature Range: 550-640° R
- Closed circuit, single return, atmospheric, continuous flow wind tunnel.
- Models are supported on a cantilevered sting via a strut with variable pitch capability.
- Turntable available for semispan models.
- Internal strain-gage balances are used for force and moment testing.
- Temperature-controlled auxiliary high pressure (3000 psi) air.
- Capability for measuring multiple fluctuating pressures.
- Data system
  - Analog data are acquired using Programmable Amplifier/Filter Units in conjunction with solid state multiplexers feeding a single 16-bit digitizer.
  - Up to 240 5-wire analog channels are routinely available and can be expanded up to the available institutional wiring limitation.
  - 24 channels of 16-bit digital input data can be inserted into the digitized data stream.
  - Pressures acquired using Electronically Scanned Pressure modules (ESPs).
  - Limited amounts of facility dedicated, real-time processing and display are available using PDP11

class processors.

- Main computations performed in near-time using a dedicated, entry level workstation class processor which also supports point by point plotting.
- User interaction is both terminal and X-terminal based.

**Status:**

- **Originally Built** - 1956
- **Major Mods** - None
- **Current Status** - Operational standby
- **Future Status** - To be closed in January, 1998

**Utilization:**

- **Who/How Much** - NASA research - 20-60%, Other government agencies - 20-60%
- **User Fees** - Determined on request.
- **Legislated Restrictions** - None

**Capital Value:**

Replacement cost \$186 Million

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For further information, contact

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